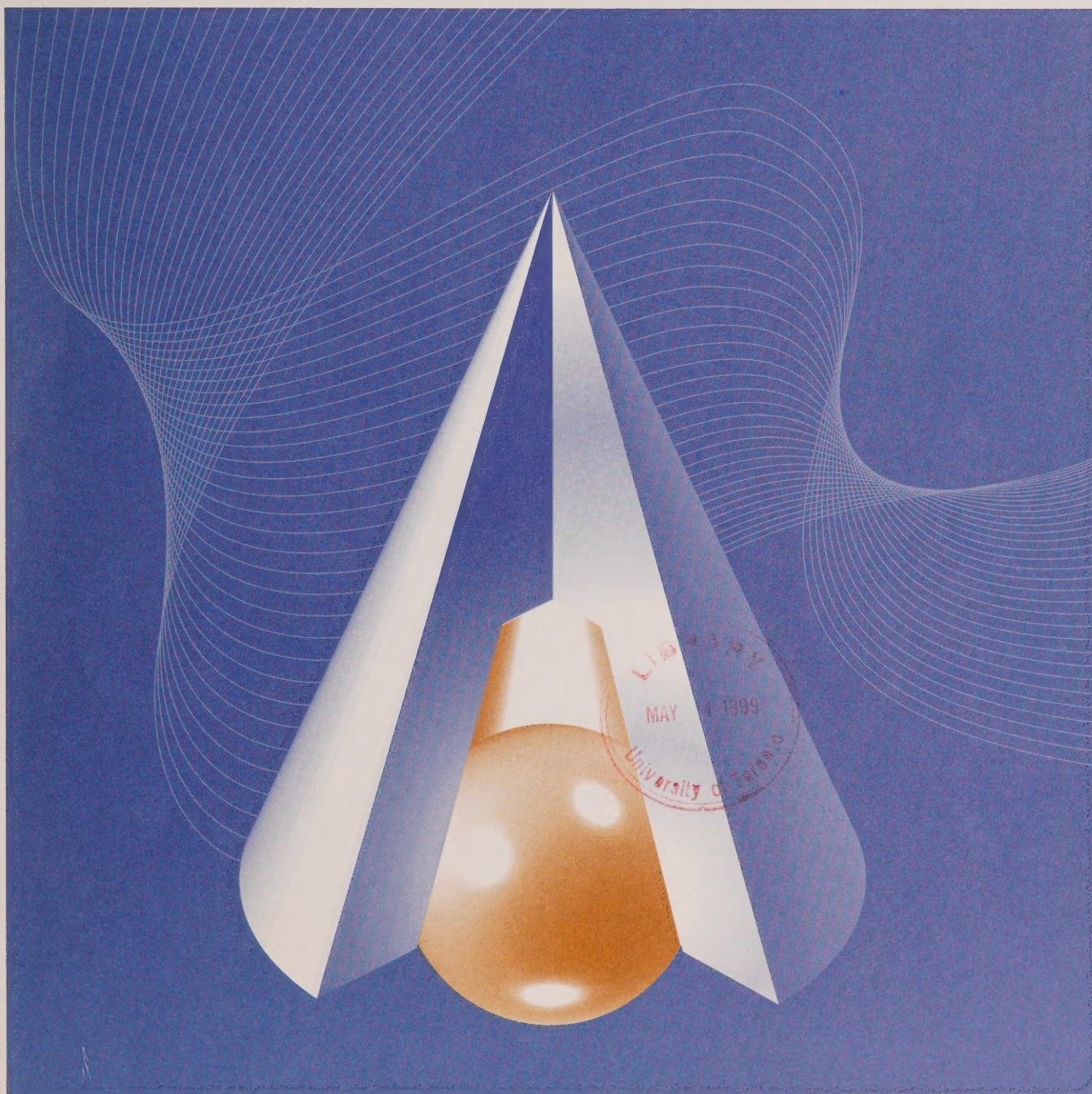# Research Paper Series

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Distribution, Inequality and Concentration of Income Among Older Immigrants in Canada, 1990

by K.G. Basavarajappa

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Abstract

While there are many studies on differences in earnings between immigrants and the native-born or among immigrant groups, they ignore the distribution and concentration of income. These aspects are important for understanding the distribution of economic welfare and consumer behaviour among members and hence are policy relevant.

Using the 1991 Census data, the distribution and concentration of income have been examined among 15 broad birthplace groups for population aged 55 years and over. About 19% of males and 15% of females receive less than half the median income and obtain 5% and 3% of the aggregate income respectively. About 30% of males and 29% of females receive more than one and half times the median income and obtain 61% and59% of aggregate income respectively. About 51% of males and 56% of females who receive incomes between half and one and half times the median income are termed middle-class and their shares of aggregate income amount to 34 and 38% respectively.

Although, older immigrants aged 55 years and over, as a group, have roughly the same quartile distribution and concentration of income as their Canadian-born counterparts, the birthplace groups differ from each other. The groups coming from the developing regions, that is, the very groups that have lower average annual incomes, also have more inequitable distribution of income than the Canadian-born or their counterparts from the developed regions. Thus, the income distribution is more polarized in the populations from developing regions than in the populations from developed regions or in the Canadian-born population. On average, females receive 45% less income than males, and there is less polarization of income among them than among males regardless of the place of birth. A part of the explanation lies in the receipt of government transfers which tend to equalize rather than polarize incomes, and older women derive higher proportion of their income from government transfers than older men.

Keywords: Quartile Distribution; Inequality; Polarization; Middle-Class; Gini Coefficient of Concentration.

Introduction

The economic integration of immigrants is always of interest to the government, policy makers and researchers. The difference in income between immigrants and the native-born is often used as a measure of adaptation and integration of immigrants into the host society. There have been many studies on differences in earnings or wages and in total income between immigrants and the native-born and among various immigrant groups in Canada (Basavarajappa and Jones, 1998; Beaujot et al, 1988; Boyd, 1992; Bloom et al, 1989, 1995; De Silva, Arnold, 1992; Miller, 1992). In these and other similar studies, various groups are compared with respect to mean wages and/or mean income received from all sources. There is also a considerable discussion of "income polarization and the myth of the declining middle class in Canada" (e.g., Beach and Slotsve, 1996; Wolfson, 1995). In none of these studies is there a discussion of how the aggregate income received by immigrant groups is distributed among members of those groups, and especially among the older immigrants.

A study of the distribution of income among a given group is important for several reasons: First, it is relevant for understanding the distribution of economic welfare among members of that group. Take for example, two groups which have equal per capita income that is above the poverty line, but one in which the income is more or less equally distributed, and the other in which the bottom half of the population receives very little. In such circumstances, one may expect that the proportion of the population needing social support will be higher in the latter than in the former group. Although, the need for social assistance is usually based on family income, an analysis of the distribution of income of individuals has policy relevance because, individual incomes contribute to family income. Second, the distribution of income plays an important role in consumer behaviour. For example, households in the upper quintiles spend a lower proportion of their income on food and shelter and a higher proportion on recreation services and equipment than their counterparts in the lower quintiles (Statistics Canada, 1994b: Table 2). In 1995, the top 20% of households received about 41% of the after-tax aggregate income while the bottom 20% received only 5.7%. The second, third and fourth quintiles received 11.5, 17.2 and 24.5% respectively. The quintile shares of after-tax aggregate income of households in constant (1995) dollars have remained roughly the same since 1980 (Statistics Canada, 1997: Table 26). What is more interesting is that, while after-tax household income in constant (1995) dollars declined by about 1% during 1986-1992 (Statistics Canada, 1997: Table 19), the expenditures on recreation in constant dollars increased by about 1.5% during the same period (Statistics Canada, 1994b: Table 2). What explains this anomaly? Bruce Little (1997) put it succinctly when he said that unequal distribution of income goes a long way in explaining "why the purveyors of high-priced toys can enjoy rising sales while their customers pass panhandlers on the street while out shopping. There are a lot of people who are very poor by any measure and a lot who are very well off". Third, studies based on regression techniques use means and

assume the equality of variance among groups. This assumption may not always hold good[1].

In this study, we examine the distribution, inequality, polarization and concentration of income of older immigrants, defined as those aged 55 years and over, by birthplace and sex. In recent years, the numbers of older immigrants from the developing regions have been increasing faster than those from the developed regions or among the Canadian-born (Basavarajappa, 1997), and it is important to know how they are doing in their adopted land. We are concerned here with individual income and not family or household income. Specifically, we examine two questions: How do birthplace groups vary in the percentile distribution of income? How does income inequality as measured by a 'polarization index' and the Gini Coefficient of Concentration vary by birthplace and sex? As the range of variation in wages and salaries and in government transfers are likely to be smaller than those in asset income, it is more appropriate to base the distribution and inequality study on total income rather than on wages and salaries. In any case, total personal income is considered as the best indicator of purchasing power, access to resources and of general economic well-being of individuals.

The Data and the Methodology

The data come from the 1991 Census of Canada. Income refers to personal income obtained in the calendar year 1990. Income from all sources (wages & salary, government transfers, investment, retirement etc.) are included. As immigrants arriving in 1990 and 1991 were instructed to report only income obtained in Canada, they would not have had full 12 months of residence in Canada in 1990 and hence are excluded from the analysis. Immigrants are divided into 14 broad birthplace groups and a residual category, the fifteenth. The non-permanent residents, i.e., those on student visa, work permit holders and refugee claimants, are included as a separate category, the sixteenth[2].

The numbers and the proportional distribution of the population aged 55 years and over by birthplace are presented in Table 1. Out of 5.32 million persons aged 55 years and over, immigrants numbered 1.38 million and accounted for 26% of the group. Among immigrants aged 55 years and over, those from the U.K. accounted for about 23%, from the rest of Europe about 51%, from the U.S.A., 6% and from developing regions, about 19%. The population aged 55 years and over as a proportion of population of all ages varied significantly from one birthplace group to another. Generally, European groups showed higher proportions (32 to 54%) and the groups from developing regions, lower proportions (11 to 22%). Thus, the European immigrants are older than those from the

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[1] In the present case involving males and females aged 55 years and over coming from 15 broad birthplace regions, the assumption does not hold good. The chi-square value based on Bartlett's test on homogeneity of variances (Brownlee, 1965) is highly significant, thus leading to the rejection of the hypothesis.

[2] As results for non-permanent residents are presented in the study, the word foreign-born rather than immigrants may have been more appropriate in the title. However, non-permanent residents are presented as a separate category and they are not included among landed immigrant (or permanent resident) birthplace categories. Hence, the word immigrant has been preferred in the title.

developing regions. One of the reasons for this difference is rooted in the history of immigration from the two regions: the immigrants from European origins have a longer history than those from developing regions, who began arriving in significant numbers only since 1970s (Basavarajappa et al., 1993).

Table 1
Distribution of Older Population Aged 55 Years
And Over by Birthplace, Canada, 1991

Birthplace	Population Aged 55 Years and Over			
	All Ages	Number	Percent Distribution	
Total	26,994,045	5,317,560*	19.7	100.0	
Canada	22,427,750	3,919,740	17.5	73.7	
Immigrants-Total	4,335,185	1,377,055**	31.8	25.9	100.0
Australia & N.Z.	21,430	4,070	19.0	0.1	0.3
U.K.	717,750	316,855	44.1	6.0	23.0
U.S.A.	249,080	81,770	32.8	1.5	5.9
Oth. Nor. Europe	83,385	38,480	46.1	0.7	2.8
Western Europe	431,540	181,440	42.0	3.4	13.2
Eastern Europe	420,455	227,090	54.0	4.3	16.5
Southern Europe	711,560	258,780	36.4	4.9	18.8
Caribbean & Bermd.	232,520	35,830	15.4	0.7	2.6
South & Cent. Amer.	219,390	23,475	10.7	0.4	1.7
Africa	166,170	24,965	15.0	0.5	1.8
W.Asia & Mid.East	146,785	19,320	13.2	0.4	1.4
East Asia	377,215	82,275	21.8	1.5	6.0
S-E. Asia	311,970	35,085	11.2	0.7	2.5
South Asia	228,790	41,410	18.1	0.8	3.0
Oth.Oce. & Oth.	17,125	2,190	12.8	0.0	0.2
Non-Perm. Res.	223,410	16,820	7.5	0.3	1.2

* Includes 3,945 persons born in Canada who later immigrated to Canada, and 16,820 Non-Permanent Residents.
** Does not include the above two categories (3,945 and 16,820).
Source: Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations.

The measures employed include mean, median, quartiles, inequality and polarization indices, and the Gini Coefficient of Concentration. The polarization index is defined as the proportion of the population receiving less than half and more than 1.5 times the median income expressed as a percentage. The converse of this, that is, the proportion receiving between 50% and 150% of the median income is defined as the middle-class

share of the population[3]. The percentage share of the aggregate income received by this group represents the income share of the middle-class.

Differences in Mean Income Among Immigrant Groups

Although, it is not intended here to explain the differences in mean income among immigrant groups, a brief description of differences in mean income is presented so as to put the distribution aspects of differences in income in proper perspective[44]. The standardized mean income of males and females by birthplace are presented in Table 2. The standardization is done for differences in age composition by using the distribution of the Canadian-born as the standard. The relative indices based on the Canadian-born income as 100 are also presented. In 1990, Canadian-born males received an average of $28,813 and their female counterparts, $15,975. Although, as a group, immigrant males and females receive roughly similar amounts to those of their Canadian-born counterparts, some of the immigrant groups receive significantly different incomes. With the exception of male immigrants born in Africa, those born in other developing regions receive 9 to 39% less than their Canadian-born counterparts. Similarly, female immigrants born in these regions receive 3 to 25% less than their Canadian-born counterparts. However, male and female immigrants born in developed regions (with the exception of those born in Southern Europe), receive up to 39% more than their Canadian-born counterparts. Consequently, immigrants from developing regions receive significantly less income than their counterparts from developed regions.

Distribution of Income and Inequality aspects

There are many ways of examining differences in income distribution and income inequality (Beach and Slotsve, 1996; Brenner et al, 1991; Wolfson, 1995). One simple way to examine distribution aspects is to calculate the percentiles, deciles, quartiles etc., and compare the birthplace groups with respect to these indices. The Lorenz Curve and Gini Coefficient of Concentration present useful ways of examining inequality and concentration of income. The income polarization indices are usually based on median income. Some of these results are presented and discussed below.

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[3] The middle-class, as defined in this manner is based solely on money-income. In-kind benefits such as subsidized housing are not included, nor are gifts, loans etc. Hence, many researchers consider household consumption as a better indicator of economic well-being and thus of standard of living. In this study, as in Beach and Slotsve (1996), middle-class is defined solely on the basis of money-income.

[4] It should be noted that the mean income by age (in groups of 5 years) and the over-all mean income of population aged 55 years and over of each immigrant group are calculated by using individual income and not grouped (by income-class) distributions. However, the grouped distributions (by age in 5 years and income-class) have been used for calculating Gini Coefficient of Concentration, and those by income-class for calculating quartiles and polarization indices for each birthplace group.

Table 2
Average Income* and Relative Indices** for Males and Females Aged
55 Years and Over by Birthplace and Sex, Canada, 1990

Birthplace	Males		Females	
	Income($)	Index	Income($)	Index
Total	28,870	100	15,933	100
Canada	28,813	100	15,975	100
Immigrants-Total	29,046	101	15,832	99
Australia & N.Z.	40,091	139	22,243	139
U.K.	35,087	122	17,427	109
U.S.A.	36,920	128	18,767	117
Oth. Nor. Europe	30,439	106	16,611	104
Western Europe	29,380	102	15,985	100
Eastern Europe	31,510	109	17,283	108
Southern Europe	23,412	81	12,813	80
Caribbean & Bermd.	26,193	91	15,488	97
South & Cent. Amer.	22,033	76	13,002	81
Africa	31,982	111	15,774	99
W.Asia & Mid.East	25,680	89	12,940	81
East Asia	20,391	71	13,144	82
S-E. Asia	19,072	66	12,620	79
South Asia	25,422	88	13,670	86
Oth.Oce. & Oth.	17,572	61	12,007	75
Non-Perm. Res.	22,646	79	13,211	83

* Average income is standardized for differences in age by taking the Canadian-born age distribution (both sexes) as standard.

** Average income of Canadian-born is taken as 100 and others expressed in terms of it.

Source:Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations

Incomes Received by the Top 25% and the Bottom 25% of the Population

Table 3 presents the percentage of the aggregate income received by the top 25% and the bottom 25% of the population by birthplace and sex. The top 25% of the total population (both sexes) receives 54.6% of the aggregate income and the bottom 25% about 7.5%. Immigrants as a group differ very little from the Canadian-born population. However, when immigrants are considered as desegregated birthplace groups, these groups differ from each other and from the Canadian-born population in significant ways.

We note that among males in the top 25%, only three of seven groups (the U.S.A., Other Northern and Eastern Europe) from the developed regions receive more than 54.6% (the overall average) of the aggregate income, whereas, seven of eight do so among the groups from the developing regions. On the other hand, in the bottom 25%, only two of seven groups (Australia & New Zealand and the U.S.A.) from the developed regions receive less than 7.5% (the overall average) of aggregate income whereas, all the eight groups do so among those from the developing regions.

Among females in the top 25%, only one of seven groups (the U.S.A.) from the developed regions receives more than 55% of aggregate income, whereas, six of eight groups do so among those from the developing regions. On the other hand, in the bottom 25%, only one of seven groups (Australia & New Zealand) from developed regions receives less than 7% of aggregate income, whereas, all of eight groups do so among those from the developing regions. In these comparisons, non-permanent resident group is not taken into account. Two things become clear from the above patterns: First, the distribution of income is relatively more inequitable among males and females from the developing regions than that among their counterparts from the developed regions; Second, the differences between developed and developing regions for females are similar to those for males.

The Ratio of Aggregate Income Received by the Top 25% to that Received by the Bottom 25%

A useful way of expressing distribution disparity or the extent of inequity is to calculate the ratio of the proportion of aggregate income received by the top 25% of the population to that received by the bottom 25%. Such ratios presented in Table 3 are also illustrated in Chart 1. A ratio of **one** indicates an equitable distribution between the two quartiles. The higher the deviation from **one**, the more inequitable is the distribution.

For the Canadian population as a whole, the top 25% of males receives 7.7 times the income received by their counterparts in the bottom 25% , and the corresponding ratio for females is 7.1 times. Again, immigrants as a group do not differ much from the Canadian-born population. However, when one considers desegregated birthplace groups, in general, the ratios for both males and females are higher among the groups from

developing regions (8 to 15 times) than those from developed regions (6 to 9 times). Thus, the distributions of income of the groups from the developing regions are more inequitable than those of the groups from the developed regions. South and Southeast Asian males and females and South & Central American females show some of the highest disparities (14 to 15 times). Among the groups from the developed regions, U.S. males and Australian & New Zealand females show the highest disparities (9 times). In general, the groups that have lower average incomes, that is, those from the developing regions, also exhibit some of the highest disparities in income distributions.

Table 3
Percentage of Aggregate Income Received by the Top and Bottom 25% of the Population Aged 55 Years and Over, and the Ratio of Top 25% to Bottom 25% by Birthplace and Sex, Canada, 1990

Birthplace	Top 25 Percent		Bottom 25 Percent		Ratio=Top25%/ Bottom25%	
	Male	Female	Male	Female	Male	Female
Total	54.8	54.5	7.1	7.7	7.7	7.1
Canada	54.7	54.5	7.2	7.7	7.6	7.1
Immigrants-Total	54.9	54.5	7.0	7.6	7.8	7.2
Australia & N.Z.	49.2	54.3	6.4	5.8	7.7	9.4
U.K.	53.4	52.9	7.7	8.1	6.9	6.5
U.S.A.	59.3	56.6	6.6	7.4	9.0	7.6
Oth. Nor. Europe	56.2	52.6	7.5	8.4	7.5	6.3
Western Europe	53.1	54.6	7.5	7.3	7.1	7.5
Eastern Europe	57.2	54.5	7.6	8.5	7.5	6.4
Southern Europe	50.1	51.3	7.8	8.5	6.4	6.0
Caribbean & Bermd.	53.1	53.4	6.1	6.4	8.7	8.3
South & Cent. Amer.	55.8	57.6	5.8	4.2	9.6	13.7
Africa	57.1	56.4	5.5	7.0	10.4	8.1
W.Asia & Mid.East	61.1	55.8	5.1	6.2	12.0	9.0
East Asia	60.6	55.7	5.2	5.6	11.7	9.9
S-E. Asia	60.6	59.7	4.2	4.0	14.4	14.9
South Asia	59.9	59.9	4.3	4.1	13.9	14.6
Oth.Oce. & Oth.	57.3	53.9	4.9	5.0	11.7	10.8
Non-Perm. Res.	61.9	50.0	6.3	10.7	9.8	4.7

Source: Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations.

Chart 1. Ratio of Aggregate Income Received by the Top 25% to That Received by the Bottom 25% of Population Aged 55 Years and Over by Birthplace and Sex, Canada, 1990
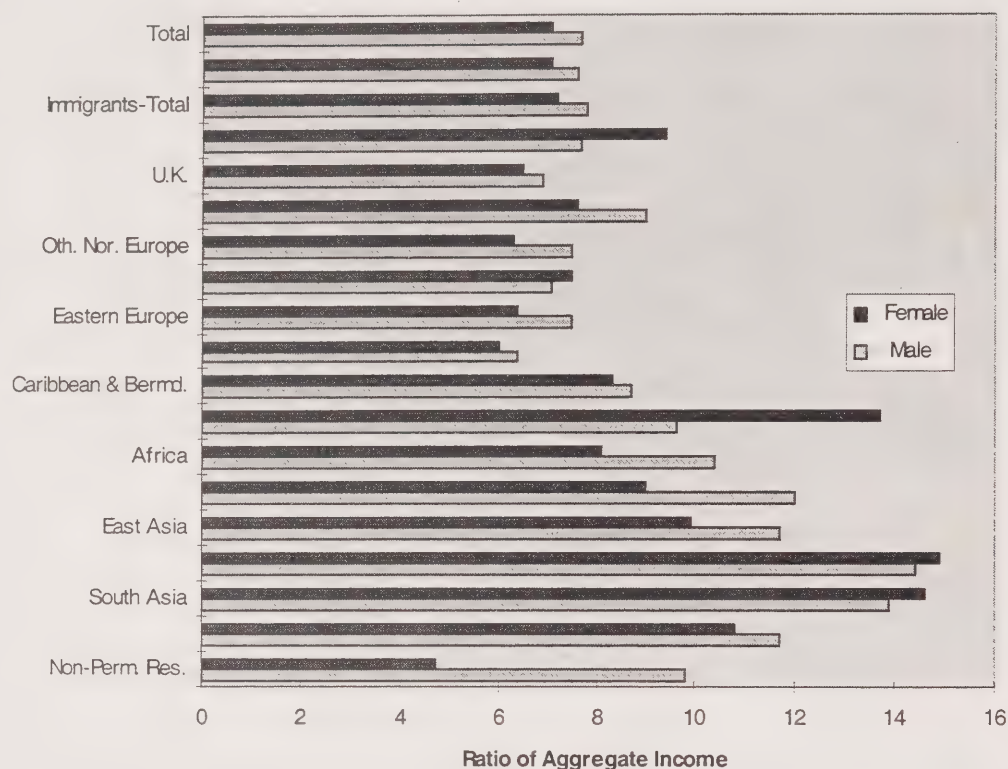
The Lorenz Curve and The Gini Coefficient of Concentration

A standard and frequently used procedure to examine the distribution and concentration of income is to employ the Gini Coefficient of Concentration and the associated Lorenz Curve. The Gini Coefficient is a summary index which measures relative inequality as do the fractiles, and is widely used. It is often described as the 'gold standard' (Wolfson, 1995). A value of **zero** indicates no concentration at all, i.e., income is uniformly distributed, for example, when 10% of the population has 10% of total income and so on. On the other hand, a value of **one** indicates total concentration, in which case, one person receives all the income in a society or a group. Table 4 presents the values of the Gini Coefficient for birthplace groups by age and sex. The values of the Gini Coefficient of Concentration confirm the earlier observations that the groups that have lower average incomes tend to have more unequal distribution and, thus, a higher concentration of income. Such findings have been observed for the Canadian Aboriginal groups, which also tend to have lower average incomes in Canada (Bernier, 1997).

The Gini Coefficient of Concentration of Income for Population Aged
55 Years and Over by Birthplace, Age and Sex, Canada, 1990

Birthplace	55-59	60-64	65-69	70-74	75-79	80-84	85+	All Ages
				Males				
Total	0.3807	0.4198	0.4047	0.3874	0.3924	0.3981	0.3866	0.4195
Canada	0.3856	0.4223	0.4031	0.3828	0.3916	0.3954	0.3893	0.4183
Immigrants-Total	0.3658	0.4107	0.4080	0.4029	0.3930	0.4040	0.3825	0.4219
Australia & N.Z.	0.2808	0.3431	0.3702	0.3907	0.4574	0.1501	0.4253	0.3742
U.K.	0.3068	0.3664	0.3687	0.3491	0.3547	0.3485	0.4117	0.3935
U.S.A.	0.3959	0.3994	0.4177	0.4070	0.4182	0.4114	0.3834	0.4487
Oth. Nor. Europe	0.3567	0.4478	0.3966	0.3638	0.3912	0.2981	0.2426	0.4281
Western Europe	0.3451	0.3892	0.3896	0.3425	0.3566	0.3729	0.3673	0.3978
Eastern Europe	0.3711	0.4341	0.3920	0.4295	0.4003	0.4850	0.3415	0.4356
Southern Europe	0.3295	0.3672	0.3629	0.3213	0.2930	0.2948	0.3115	0.3786
Caribbean & Bermd.	0.3496	0.3963	0.4223	0.4156	0.4081	0.3422	0.4529	0.4100
South & Cent. Amer.	0.3904	0.4078	0.4863	0.4179	0.3918	0.4843	0.4581	0.4434
Africa	0.3880	0.4147	0.4684	0.4396	0.4921	0.3418	0.3739	0.4423
W.Asia & Mid.East	0.4190	0.4951	0.5133	0.5152	0.5324	0.3486	0.4900	0.4881
East Asia	0.4221	0.4852	0.5117	0.5032	0.4335	0.3706	0.3804	0.4921
S-E. Asia	0.4073	0.4767	0.5314	0.5268	0.3812	0.4321	0.3943	0.4989
South Asia	0.3771	0.4620	0.5176	0.4700	0.4376	0.4091	0.5246	0.4829
Oth.Oce. & Oth.	0.3970	0.4161	0.6094	0.3002	0.3195	0.0000	0.0000	0.4582
Non-Perm. Res.	0.5067	0.5363	0.3903	0.3732	0.3417	0.3529	0.3797	0.4924
				Females				
Total	0.4544	0.4851	0.4016	0.3624	0.3442	0.3297	0.3013	0.4142
Canada	0.4593	0.4892	0.3980	0.3570	0.3445	0.3213	0.3127	0.4141
Immigrants-Total	0.4388	0.4726	0.4120	0.3828	0.3406	0.3402	0.2796	0.4150
Australia & N.Z.	0.3716	0.4446	0.4087	0.4216	0.3554	0.2186	0.5682	0.4288
U.K.	0.4216	0.4680	0.3839	0.3640	0.3406	0.3281	0.2845	0.3947
U.S.A.	0.4717	0.4919	0.4430	0.4391	0.3610	0.3757	0.3246	0.4338
Oth. Nor. Europe	0.4046	0.4670	0.3919	0.3501	0.2615	0.3103	0.2556	0.3875
Western Europe	0.4464	0.4805	0.4088	0.3671	0.3432	0.2873	0.2428	0.4211
Eastern Europe	0.4466	0.4595	0.4009	0.3938	0.3520	0.3877	0.2645	0.4078
Southern Europe	0.4152	0.4460	0.3547	0.2811	0.2549	0.2252	0.1882	0.3791
Caribbean & Bermd.	0.3764	0.4272	0.4170	0.3404	0.3010	0.2656	0.3807	0.4136
South & Cent. Amer.	0.4487	0.4508	0.5555	0.4406	0.3210	0.4131	0.2532	0.4697
Africa	0.4485	0.4742	0.4017	0.3247	0.3041	0.3116	0.2891	0.4380
W.Asia & Mid.East	0.4723	0.4853	0.4412	0.3904	0.2498	0.3187	0.4175	0.4355
East Asia	0.4388	0.4578	0.4951	0.3935	0.3141	0.3005	0.2834	0.4392
S-E. Asia	0.4471	0.4892	0.5340	0.3922	0.3842	0.2983	0.3455	0.4884
South Asia	0.4479	0.5112	0.5175	0.4615	0.3435	0.3782	0.3177	0.4852
Oth.Oce. & Oth.	0.4530	0.5017	0.3483	0.3844	0.2752	0.2502	0.2640	0.4217
Non-Perm. Res.	0.4367	0.4280	0.3940	0.2701	0.2072	0.2703	0.2339	0.3474

Source: Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations.

For males, there does not seem to be a discernible trend in concentration by age. For females, however, concentration seems to decline with increasing age, that is, the distribution of income becomes less inequitable with increasing age. One reason may be that women, especially at older ages, derive a greater proportion of their income from government transfers and the variations in these from one age group to another tend to be less than those from other sources of income, e.g., wages and salaries, investment, annuity, superannuation and retirement (Statistics Canada, 1994a). One further difference between males and females is that at ages under 65 years, females have higher concentration than their male counterparts, but at ages above 75 years, males have higher concentration than females.

Inequality and Polarization Measures Based on the Median

Beach and Slotsve (1996) present a number of measures based on the median which indicate the inequality and the degree of polarization of income. Polarization indices are measures of the percentage of income flowing to recipients with either very high or very low incomes. In this study, the percentage of population receiving ± 50% of the median income is chosen as the polarization index. Thus, the sum of figures in columns B and C in Table 5, which is not shown, represents the polarization measure. The converse of the degree of polarization, that is, the percentage of population receiving between 50 and 150% of the median income is the population share of the middle-class. The percentage of aggregate income obtained by those receiving an income between 50 and 150% of the median income is the income share of the middle class. The population share of the middle-class and its income share are presented in Table 5 in columns D and G respectively.

Two types of polarization and inequality measures can be calculated: for each immigrant group, one based on the median income of the respective group; and the other, based on the median income of the Canadian-born population. Table 5 presents the latter measures and these are discussed below.

Population Shares

Speaking of males first, about 19% of the population receives less than half of median income and there is no difference between the Canadian-born population and immigrants as a group. Generally, the proportion of the population receiving less than 50% of the median income is higher among the groups from the developing regions (20 to 41%) than among the groups from the developed regions (12 to 20%). Except for the group from Southern Europe, all groups from the developed regions have lower proportions than the Canadian-born group, and all groups from the developing regions, higher proportions. The groups from Australia and New Zealand and the U.K. have the lowest proportion (12%). The range of variation among the groups from the developing regions is wider, and the groups from Africa and the Caribbean and Bermuda have the lowest proportion (20%) among them.

Table 5

Median Income and Inequality and Polarization Measures for Population Aged 55 Years and Over by Birthplace and Sex, Canada, 1990

Birthplace	A	B	C	D	E	F	G
		Population Share		Males		Aggregate Income Share	
Total	21,561	19.0	30.3	50.7	5.0	61.1	33.9
Canadian-born	21,583	19.1	30.1	50.8	5.0	60.8	34.2
Immigrants-Total	21,588	19.0	30.7	50.3	4.8	61.8	33.4
Australia & N.Z.	34,222	23.9	29.5	46.6	6.0	58.1	35.9
U.K.	25,330	18.6	29.9	51.5	5.1	59.2	35.7
U.S.A.	22,322	19.2	32.7	48.1	4.7	67.4	27.9
Oth. Nor. Europe	20,115	14.8	32.5	52.7	3.9	64.7	31.4
Western Europe	24,129	19.7	29.5	50.8	5.3	58.3	36.4
Eastern Europe	19,925	13.7	30.5	55.8	3.6	63.1	33.3
Southern Europe	21,018	18.5	28.8	52.7	5.2	55.2	39.6
Caribbean& Bermd.	23,711	24.2	29.5	46.3	5.8	58.6	35.6
South&Cent. Amer.	18,287	20.1	30.5	49.4	3.7	62.3	34.0
Africa	25,701	25.8	32.1	42.1	5.8	65.5	28.7
W.Asia&Mid. East	17,624	21.3	32.3	46.4	3.8	68.9	27.3
East Asia	13,924	19.3	34.0	46.7	3.1	70.2	26.7
S-E. Asia	13,206	23.6	35.1	41.3	3.7	71.7	24.6
South Asia	18,988	24.3	37.0	38.7	4.1	73.7	22.2
Oth.Oce.& Oth.	13,815	20.8	33.6	45.6	3.3	67.8	28.9
Non-Perm. Res.	13,364	13.3	34.9	51.8	2.2	71.7	26.1

NOTES:

A: Median income.

B: Percent share of population receiving less than half of median income of the group.

C: Percent share of population receiving more than 1.5 times the median income of the group.

(B+C): Percent share of population which is defined as the polarization index.

D: Percent share of population receiving between 50 and 150% of median income of the group.
This is defined as the middle-class and is the converse of polarization index [100-(B+C)].

E: Percent of aggregate income received by persons receiving less than half of median income of the group.

F: Percent of aggregate income received by persons receiving more than 1.5 times median income of the group.

G: Percent share of aggregate income received by the middle class [100 - (E + F)].

Source: Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations. The values given in columns A, B, C, E and F are calculated from the grouped distributions by using linear interpolation.

Table 5 (Cont.)
Median Income and Inequality and Polarization Measures for Population Aged 55 Years and Over by Birthplace and Sex, Canada, 1990

	A	B	C	D	E	F	G
		Population Share			Aggregate Income Share		
Birthplace				Females			
Total	11,484	14.9	28.8	56.3	3.1	58.8	38.1
Canadian-born	11,515	14.9	29.0	56.1	3.1	59.1	37.8
Immigrants-Total	11,406	15.1	28.2	56.7	3.0	58.1	38.9
Australia & N.Z.	17,703	23.5	34.4	42.1	5.2	66.2	28.6
U.K.	12,333	13.8	29.0	57.2	3.1	57.6	39.3
U.S.A.	11,931	13.3	30.8	55.9	2.5	63.0	34.5
Oth. Nor. Europe	11,990	12.9	28.3	58.8	2.7	56.6	40.7
Western Europe	11,605	16.7	29.6	53.7	3.5	60.0	36.5
Eastern Europe	11,656	11.7	27.9	60.4	2.4	57.7	39.9
Southern Europe	10,467	15.1	23.6	61.3	3.3	49.6	47.1
Caribbean& Bermd.	11,886	17.3	33.2	49.5	2.8	63.7	33.5
South&Cent. Amer.	10,267	22.9	26.0	51.1	3.4	58.8	37.8
Africa	11,263	15.4	31.0	53.6	2.7	63.3	34.0
W.Asia&Mid. East	10,133	18.4	22.8	58.8	3.2	53.5	43.3
East Asia	10,252	20.0	23.5	56.5	3.2	54.0	42.8
S-E. Asia	9,707	23.9	26.4	49.7	3.6	61.2	35.2
South Asia	10,129	22.5	27.0	50.5	3.2	62.3	34.5
Oth.Oce.& Oth.	10,261	20.7	25.3	54.0	3.1	54.3	42.6
Non-Perm. Res.	10,586	10.0	19.9	70.1	2.4	44.6	53.0

NOTES:

A: Median income.

B: Percent share of population receiving less than half of median income of the group.

C: Percent share of population receiving more than 1.5 times the median income of the group.

(B+C): Percent share of population which is defined as the polarization index.

D: Percent share of population receiving between 50 and 150% of median income of the group.

This is defined as the middle-class and is the converse of polarization index [100-(B+C)].

E: Percent of aggregate income received by persons receiving less than half of median income of the group.

F: Percent of aggregate income received by persons receiving more than 1.5 times median income of the group.

G: Percent share of aggregate income received by the middle class [100 - (E + F)].

Source: Statistics Canada, 1994, 1991 Census of Canada, Special Tabulations. The values given in columns A, B, C, E and F are calculated from the grouped distributions by using linear interpolation.

On the other hand, the proportion of the population receiving more than 1.5 times the median income is about 30%. Again the Canadian-born and immigrants as a group have roughly the same proportion as the total population. Among the groups from the developed regions, Australia & New Zealand stands out with 53%, and among those from the developing regions, Africa with 40%. Except for groups from Africa (40%), South Asia and the Caribbean & Bermuda (33%), all others from developing regions have lower proportions (17 to 25%) than those from developed regions and the Canadian-born group.

The polarization indices are slightly higher for the groups from the developing regions than for those from the developed regions. Consequently, the middle-class shares of population are higher for the groups from developed regions (49 to 55%, excluding the Australian & New Zealand group) than for those from the developing regions (38 to 49%). Even though the polarization indices for the groups from the developing regions are only slightly higher than for those from the developed regions, it should be noted that this is the result of much higher shares of population receiving less than half the median income and smaller shares of population receiving more than one and half times the median income of the Canadian-born among the groups from the developing regions.

For females, the proportion of the population receiving less than half of median income is about 15% and the proportion receiving more than 1.5 times the median income is about 29%. Thus, the proportion receiving less than half of median income is smaller among females than among males (15% Vs. 19%) while the proportion receiving more than 1.5 times the median income is roughly the same. As in the case of males, immigrants as a group do not differ from the Canadian-born population. The differences between the developed and the developing regions tend to be similar to those of males.

Comparing males and females, we note that the population shares receiving ± 50% of the median income (polarization indices) are higher for males than for females indicating that the income distributions for males are more inequitable than those for females. Consequently, within each birthplace group, the population share of the middle-class is higher for females than for males.

Income Shares

For males, about 5% of the aggregate income is received by those receiving less than half of the median income and there is no difference between the Canadian-born population and immigrants as a group. The proportion of aggregate income obtained by those receiving less than half of the median income tends to be lower among the groups from the developed regions (2 to 6%) than among the groups from the developing regions (4 to 11%). It may be recalled that the per capita incomes of the groups from the developing regions are lower than those of the groups from the developed regions. Hence, the higher proportions of aggregate incomes received by the groups from the developing regions as compared to those from the developed regions result from their greater shares of population receiving such (i.e., less than half the median) incomes.

On the other hand, about 61% of the aggregate income is obtained by those receiving more than 1.5 times the median income. As before, immigrants as a group have roughly the same proportion as the Canadian-born population. The proportions of aggregate income received by the groups from the Caribbean & Bermuda, Africa, West Asia & Middle East and South Asia, all from the developing regions are fully comparable to those received by the groups from the developed regions. The proportions for other groups from the developing regions are smaller. For these groups, this again is due to smaller shares of their population receiving such (i.e., more than 1.5 times the median) incomes. The resulting aggregate income shares obtained by persons receiving less than half and more than 1.5 times the median income or those of the middle-class do not follow high-low dichotomy for the two types (developed and developing) of regions.

For females, about 3% of the aggregate income is obtained by those receiving less than half of the median income. This is less than that for males (5%). Immigrants as a group and the Canadian-born population have roughly the same proportion. Generally, the proportion of aggregate income obtained by those receiving less than half the median income is higher for the groups from the developing regions than for the groups from the developed regions. This pattern is similar to that of males.

Almost 59% of aggregate income is obtained by females receiving more than 150% of the median income as compared to 61% for males. Again, immigrants as a group have roughly the same proportion as the Canadian-born population. Generally, the groups from the developed regions obtain higher proportions of aggregate income than those from the developing regions. The exceptions are the groups from Southern Europe, the Caribbean & Bermuda, Africa and South Asia. As in the case of males, the resulting middle-class shares of aggregate income do not follow high-low dichotomy by type of region. Over-all, the proportion of aggregate income received by the middle-class is 38% for females compared to 34% for males.

It may be mentioned in passing that when the respective group median income is used instead of the median of the Canadian-born population, the population and aggregate income shares of the populations receiving less than half and more than one and half times the median income turn out to be roughly of the same magnitude as before for the groups from the developed regions (with the exception of the Australian & New Zealand group), but different for the groups from the developing regions. For these groups, the population shares and the aggregate income shares are less for populations receiving less than half the median income, but more for populations receiving more than one and half times the median income. However, the resulting polarization indices and the aggregate income shares of middle-class turn out to be remarkably similar to those based on the Canadian-born median for all birthplace groups. This finding holds good for both males and females.

Discussion and Conclusions

The top 25% of the population aged 55 years and over receives about 55% of the aggregate income while the bottom 25%, about 7.5%. Although, immigrants as a group have roughly the same quartile distribution as the Canadian-born population, the birthplace groups differ from each other and from the Canadian-born. The top 25% of immigrant males and females from the developing regions receive higher proportions of aggregate income than their counterparts from the developed regions, while the bottom 25% from the developing regions receive smaller proportions than their counterparts from the developed regions. Thus, the very groups that have lower average incomes also have a more inequitable distribution of income, thereby showing that the economic welfare too is more inequitably distributed among them.

Although, the disparities in income distribution among immigrant groups and the Canadian-born population have been described, causes giving rise to such disparities are not readily identifiable. While it is well-known that duration of residence in Canada is positively associated with income for immigrants (Beaujot et al, 1988; Bloom and Gunderson, 1989), it is not readily apparent that the differences in duration can also influence inequality and polarization in income distribution among immigrant groups by impacting on work history, opportunities for asset accumulation, eligibility for Old Age Security and Guaranteed Income Supplement (OAS/GIS) and various other social support benefits. For example, immigrants who have been in Canada for shorter durations (e.g., those from developing regions) would not have had time to build up credits for superannuation, Canada or Quebec Pension Plan benefits (C/QPP) or to become eligible for OAS/GIS (which requires 10 years of residence in Canada) when compared with those who have been in Canada for longer periods (e.g., many European groups). The C/QPP, OAS/GIS and social support benefits are most likely the sources which tend to equalize rather than polarize incomes. Indeed, the duration of residence is inversely correlated with all indices of inequality and polarization used in this study, although, some are not statistically significant. The average duration of residence in Canada for birthplace groups is presented in Basavarajappa (1998).

Linear Correlation Coefficient Between Duration of Residence
and Inequality Measures for 15 Birthplace Groups[a] by Sex
(the t- values are given in parentheses)

	Males	Females
Inequality Measure	Correlation Coefficient	
Gini Coefficient	-0.7139 (3.68)	-0.7120 (3.66)
Ratio of Top25%/Bot25%	-0.8756 (6.54)	-0.7883 (4.62)
Polarization Index	-0. 5776 (2.55)[b]	-0.1679 (0.61)[b]

a. Non-permanent resident group is excluded.
b. Not statistically significant.

Since the direction of relationship is predicted, all values greater than $t_\alpha = 2.65$ for 13 d.f. are statistically significant at 0.01 level. Except for polarization index, all other inequality measures are significantly associated with duration of residence. It may be recalled that the shares of population of the groups from the developing regions receiving less than half the median income were more than, and those receiving more than one and half times the median income were less than the shares of population of the groups from the developed regions. Consequently, the resulting polarization index masks the differences among birthplace groups. This explains the weak relationship between polarization index and duration of residence.

There are, of course, other factors which may give rise to polarization of income. For example, educational attainments impact on work history and are strongly related to income. The immigrants from developing regions tend to have higher proportions at both ends of the education spectrum than their counterparts from developed regions (Basavarajappa, et al, 1993), thereby giving rise to the likelihood of higher polarization of income among them. The class of immigration, i.e., whether one came to Canada as an independent immigrant, as a sponsored older parent, or as a refugee impacts on earnings and opportunities for asset accumulation and influences polarization. For example, if one came as an independent immigrant who is usually assessed on the basis of suitability for entry into the labour force, occupational demand etc., it is reasonable to expect that one's chances of obtaining a job, accumulating assets, and building credits for superannuation are higher than those for someone coming as a dependent, refugee or as a sponsored older parent.

With respect to concentration of income, as shown by the Gini Coefficient of Concentration, sex differences, for the most part, seem small. However, up to the age of 65, females tend to exhibit slightly higher concentration than males, and after the age of 75, males tend to have a higher concentration than females among most birthplace groups. Again by age, while there does not seem to be a discernible trend for males, for females, concentration seems to decline or distribution becomes less inequitable with increasing age. On average, females receive 45% less income than males, and there is less polarization among them. Consequently, the middle-class shares of both the population and the aggregate income are higher for females than for males regardless of the place of birth. A part of the explanation lies in the receipt of government transfers which tend to equalize rather than polarize incomes, and older women derive higher proportion of their income from government transfers than older men (Statistics Canada, 1994a).

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